

CLAIMS

I Claim:

1. A rotary cutting blade comprising a boron steel blank of a Rockwell C hardness of between 48 and 55 on the Rockwell Hardness Scale.

2. The rotary cutting blade of Claim 1 wherein the blank is formed of a boron steel selected from the group consisting of 10B36, 10B37, 10B38, 10B39, 10B40, 10B41 and 10B42 steel.

Sub B1
3. A process for forming a rotary cutting blade, comprising the steps of
a) working a blank of boron steel to have a bevelled cutting edge; and
b) heat treating the formed blank to elevate the blank hardness to between 48 and 55 on the Rockwell Hardness Scale.

2. The process of Claim 3, wherein the working step comprises cold-forming the blank of boron steel.

3. The process of Claim 3 wherein the blank is formed of a boron steel selected from the group consisting of 10B36, 10B37, 10B38, 10B39, 10B40, 10B41 and 10B42 steel.

6. The process of Claim 3 wherein the heat treating step comprises austempering the formed blank.

Sub B2
7. The process of Claim 3 wherein the heat treating step comprises marquenching the formed blank.

Sub
B2

8. The process of Claim 3 wherein the heat treating step comprises quenching the formed blank in a liquid selected from the group consisting of oil, polymer, or water, and tempering the quenched blank.

9. The process of Claim 3 wherein the heat treating step comprises:

- a) heating the blank to approximately 1560 °F;
- b) quenching the heated blank into a liquid salt bath at approximately 500 °F for about 20 seconds;
- c) withdrawing the quenched blank from the salt bath and allowing it to air cool to room temperature; and
- d) tempering the cooled blank at approximately 300 °F.

10. The process of Claim 3 wherein the heat treating step comprises:

- a) heating the blank to approximately 1560 °F;
- b) quenching the heated blank into a liquid salt bath at approximately 500 °F for about 20 minutes; and
- c) withdrawing the quenched blank from the salt bath and allowing it to air cool to room temperature.

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B3